Summary of Changes

to

P 440.1-10
NETL Fire Protection Cold Weather Protection Program

Revised Version Issued as P 440.1-10A of 4/23/03

NETL Procedure 440.1-10, NETL Fire Protection Cold Weather Protection Program, of 7/19/01, has undergone revisions. Changes to the Procedure were limited to the standardization of the quality control section, report period delivery, and enhancement of FPPM notifications. Please replace NETL Procedure 440.1-10 with NETL Procedure 440.1-10A.

U.S. Department of Energy

National Energy Technology Laboratory

PROCEDURE

P 440.1-10A

DATE: 4/23/03

SUBJECT: FIRE PROTECTION COLD WEATHER PROTECTION PROGRAM

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1. PURPOSE. To establish requirements for protecting systems used for fire protection purposes at NETL during periods of cold weather.

2. CANCELLATION. This Procedure replaces NETL Procedure 440.1-10, NETL Fire Protection Cold Weather Protection Program, of 7/19/01.

3. REFERENCES.

   a. DOE Order 420.1, Facility Safety.

   b. DOE Order 440.1, Worker Protection Management for DOE Federal and Contractor Employees.

   c. DOE Guide 440.1-5, Fire Safety.

   d. Statutory ES&H Standards:

      (1) 29 CFR 1910.159, Automatic Sprinkler Systems.

   e. Reference ES&H Standards:

      (1) NFPA 25, Inspection Testing and Maintenance of Water Based Fire Protection Systems.

4. DEFINITIONS.

   a. Dry-Pipe System -- The method used at NETL for the protection of sprinkler systems exposed to freezing. In the dry-pipe system, the piping contains compressed air that holds back the water by means of a dry-pipe valve. When a sprinkler opens, the air is released, the pressure drops, and the dry-pipe valve opens to admit water into the piping and to the sprinkler heads.

   b. FPPM -- Fire Protection Program Manager. The NETL Manager who has the day-to-day authority/responsibility to administer the Fire Protection Program at NETL.

INITIATED BY: Office of Business and Logistics
NO. OF PAGES/ATTACHMENTS: 5 pages

c. Sprinkler System -- A system of piping designed in accordance with fire protection engineering standards and installed to control or extinguish fires. The system includes an adequate and reliable water supply and a network of specially sized piping and sprinklers that are interconnected. The system also includes a control valve and a device for actuating an alarm when the system is in operation.

d. SSC -- Site Support Contractor (Site Operations). The on-site organization under contract to NETL that provides site operations support services.

e. Wet-Pipe System -- The most common type of sprinkler system used and operated. As the name implies, the sprinkler piping is filled to the sprinkler heads with water under pressure. Then, when heat activates the sprinkler, water is released to the area below. One method for protecting wet-pipe systems is to fill the exposed sections of piping with an anti-freeze solution.

5. QUALITY CONTROL.

a. The FPPM shall be responsible for assuring the effectiveness of the Fire Protection Cold Weather Protection Program through documented assessments.

b. This NETL Directive will be reviewed (and revised as needed) by the FPPM each year for the first 3 years after initial implementation and once every 3 years thereafter to ensure that it is kept up-to-date with current requirements. More frequent reviews and revisions could occur due to significant changes in regulatory and site conditions.

6. RESPONSIBILITIES.

a. Line Managers shall:

(1) Provide direction to employees for appropriate action to take should there be a fire protection system malfunction or deactivation.

(2) Discontinue research, construction, and service operations as required when fire protection system coverage is interrupted.

b. The FPPM or designee shall:

(1) Establish the Cold Weather Protection Program requirements for fire protection systems and equipment. Typically, program requirements shall be effective from October through May.

(2) Ensure schedules are established for preparing the facilities and fire systems/equipment for the cold weather season.

(3) Ensure procedures are accurate and up-to-date for notifying management and maintenance personnel of potential cold weather protection issues and fire system impairments.

(4) Ensure equivalent protection is provided whenever the fire system is shut down because of freeze damage repair. Acceptable equivalent protection includes a fire watch with extinguishers or hose lines in place and manned. Evacuation of the affected work area until restoration is complete also is acceptable.

(5) Ensure employees are notified and the necessary temporary precautions are taken to assure employee safety if a fire protection system becomes inoperable.

(6) Provide support for preventative measures, including design, testing, and maintenance of the fire protection systems in an effort to prevent failures of these systems during cold weather.

(7) Facilitate efforts for the expedient repair of fire protection systems should sprinkler system failures occur to minimize risks to personnel and to minimize property damage.

(8) Investigate cold weather-related incidents associated with fire protection systems and take appropriate action to prevent similar incidents from occurring in the future.

c. The Site Support Contractor shall prepare annually a fire system/facility cold weather protection assessment in late September to evaluate systems and facility status relative to cold weather protection.

d. Security shall:

(1) Conduct recorded patrols to monitor facilities.

(2) Perform fire watch operations when alarm and suppression systems are impaired or inoperable.

(3) Notify SSC, FPPM, and emergency response personnel when fire protection cold weather protection activities need to be activated based on observed conditions.

(4) Notify the FPPM immediately upon the activation or impairment of a fire protection system or equipment.

7. TRAINING REQUIREMENTS. Please see the NETL Procedure on Fire Protection Program Training for other applicable training requirements.

8. DOCUMENT CONTROL. The most recent and official controlled hard copy version of this Procedure shall reside with NETL's Directives Coordinator. An electronic version of this controlled Procedure shall be placed on the NETL Intranet for employee use. Printed hard copies of this Procedure (e.g., those printed from the Intranet) shall be considered non-controlled documents.

9. PROCEDURE.

a. General Program Requirements

(1) The Fire Protection Cold Weather Protection Program shall be in effect from October through May.

(2) Fire protection systems and facilities shall be evaluated annually to determine areas susceptible to freezing and to identify corrective actions required to minimize property loss/damage due to cold weather conditions. The Assessment Report shall be submitted to the FPPM by September 30 for review and acceptance.

(3) Every effort shall be made to maintain facility indoor temperatures above 40 °F.

(4) Prior to draining fire protection systems due to a potential system freeze-up, protection alternatives shall be considered and evaluated.

(5) Suppression systems shall be shut down and drained only as a last resort to prevent damage to the system as a result of freeze conditions. Systems may be drained for brief periods of time, but they must be restored to normal operation as soon as practicable to minimize risk potential to the facility.

(6) Standard operating procedures (SOPs) for repairing or replacing damaged systems and facilities shall be required to correct fire protection cold weather protection problems.

b. Specific Program Requirements

(1) A fire system/facility cold weather protection assessment shall be conducted by the ES&H SSC in late September to evaluate systems and facility status relative to cold weather protection. As a minimum, the following conditions/situations should be considered:

(a) Insufficient heating to allow freezing during the severest cold that might reasonably be expected.

(b) Windows or doors that are left open during severely cold weather.

(c) Lack of heating because of shortage of fuel.

(d) Branch lines of dry pipe systems not correctly pitched to allow drainage.

(e) Feed mains or piping located in unheated areas or not protected to prevent freezing.

(f) Freezing of water in underground mains.

(2) Security shall conduct roving patrols of the facilities and report potential or actual freeze protection conditions or problems to the FPPM, SSC ES&H, and other designated Federal and contractor personnel.

(3) The FPPM or designee shall take action to best mitigate any damage caused by freeze-ups, including leak damage. If the fire protection system is not operational within 24 hours of discovery, or if significant damage has been sustained, the ES&H Division Director shall be briefed on the situation.

(4) While thawing pipes and other system components or repairing damaged fire protection systems, other NETL ES&H procedures must be followed when applicable (e.g., Work Permit Procedure [for Hot Work], Fire Protection Impairment Procedure).

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Associate Director, OBL